

APPENDIX A - TETON FAULT SECTION AND FAULT SCARP SLIP RATE DATA

Table A-1: Teton fault - Detailed fault section summary data

Fault Section*		Strike*	End Points		Approximate Length (km)	Notes
No.	Locality		lat.	long.		
		Scarps, and slip rate, decrease to 0 at north end near Steamboat Mountain. Linkage to Buelah or Herring Lake faults requires > 4 km left-step in fault trace.				
N1	East of Steamboat Mountain	N12E	44.0509 44.0492	-110.6917 -110.6922	0.2	Defined by limit of mappable fault scarp.
		0.2 km right step				
N2	East of Steamboat Mountain	N3E	44.0872 44.0405	-110.6939 -110.6949	0.8	Defined by limit of mappable fault scarp.
		0.2 km right step				
N3	Southeast of Steamboat Mountain	N10E	44.0389 44.0334	-110.6963 -110.6978	0.7	Defined by limit of mappable fault scarp.
		0.2 km right step(?) or possibly continuous with N-4 with minor strike change				
N4	South of Steamboat Mountain	N8E	44.0331 44.0039	-100.6983 -110.7071	1 - 3.5	Defined by lineaments and scarps in landslide complex along northeast shore of Jackson Lake. Limits to south are concealed by Jackson Lake.
		0.6 - 1.6 km left step				
*All fault sections are assumed to dip east to southeast. Dip of individual fault sections are unknown. Overall dip range of fault is 45 to 75 (Byrd, 1995).						

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Fault Section*		Strike*	End Points		Approximate Length (km)	Notes
No.	Locality		lat.	long.		
N5a	West of Berry Creek beneath Jackson Lake	N2E (N10W - N8E)	44.0037	-110.6958	< 2	Inferred section beneath Jackson Lake. N-5a and N-5b are alternate depictions of fault location. Location and orientation are not constrained. If this section does not exist; sections N-1 to N-4 may represent separate fault or fault segment, or there could be a 4-km gap between section N-4 and N-6.
N5b						
		N-5a has 0.3 - 0.6 km left step; N-5b is continuous; strike change; or 4-km gap to N-4.				
N6	Wilcox Point	N48E	43.9873 43.9828	-110.6965 -110.7022	0.5	Defined by short fault scarp at Wilcox Point; uncertain extent to northeast beneath Jackson Lake.
		continuous; strike change				
N7	Between Wilcox Point and Colter Canyon	N3E	43.9828 43.9528	-110.7022 -110.7039	3.3	Inferred section; short sections of scarps at north and south ends; mostly obscured by landslide complex.
		continuous, strike change				
N8	South side of Colter Canyon	N30E	43.9528 43.9454	-110.7039 -110.7095	1.3	Defined by fault scarps at and south of Colter Canyon.
		continuous, strike change				
N9	Between Colter and Waterfalls Canyons	N12E	43.9454 43.9174	-110.7095 -110.7164	2.8	Defined by nearly continuous fault scarps along range front.
		continuous, strike change				
N10	North side of Waterfalls Canyon	N55E	43.9174 43.9142	-110.7164 -110.7222	0.5	Continuous fault scarp; may extent additional 0.3 km to south west.
		continuous; strike change				
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No.	Locality		lat.	long.		
N11	Waterfalls Canyon to North Moran Bay	N15E	43.9142 43.8903	-110.7221 -110.7316	2.8	Scarps somewhat discontinuous in broad-crested moraine on south side of Waterfalls Canyon, possibly secondary deformation of moraine (?)
continuous, strike change						
N12	Northwest of North Moran Bay	N65E	43.8902 43.88.53	-110.7315 -110.7457	1.3	Fault scarps follow topographic front north of Moran Bay.
gap; no evidence of scarps or faults in late Pleistocene deposits adjacent to and beneath Moran Bay (Smith et al., 1993a).						
C1	West of Moran Bay	N12W	43.8733 43.8509	-110.7563 -110.7494	2.6	Defined by faults scarps north of Moran Bay between Moran and Snowshoe Creeks, assumed fault along west edge of Moran Bay, and scarps and lineaments on strike south of Moran Bay.
continuous, strike change						
C2	South of Moran Bay	N53W	43.8733 43.8444	-110.7494 -110.7362	1.3	Fault scarps along steep topographic front on south side of Moran Bay
continuous, strike change						
C3	West of Bearpaw Bay	N8W	43.8443 43.8319	-110.7362 -110.7336	1.4	Continuous scarp from moraines below Skillet Glacier, south to Trapper Lake
continuous, strike change						
C4	North Leigh Lake	N12E	43.8319 43.8067	-110.7336 -110.7411	2.9	Scarp continues south of Trapper Lake; inferred beneath landslide north of Leigh Lake and beneath Leigh Lake.
continuous, strike change						
C5	South Leigh Lake	N35W	43.8067 43.8016	-110.7411 -110.7358	0.6	Possibly discontinuous scarps in moraines on southwest side of Leigh Lake

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Fault Section*		Strike*	End Points		Approximate Length (km)	Notes
No.	Locality		lat.	long.		
continuous, strike change						
C6	West of String Lake	N10E	43.8016 43.7752	-110.7358 -110.7452	3	Nearly continuous scarp from near south end of Leigh Lake to moraine on north side of Jenny Lake
continuous, strike change						
C7	Jenny Lake	N12W	43.7752 43.7557	-110.7452 -110.7390	2.2	Mostly continuous scarp from Hanging Canyon and along west edge of Jenny Lake; including scarps on bottom of Jenny Lake.
continuous, strike change						
S1	Lupine Meadows to Glacier Gulch	N21E	43.7557 43.7193	-110.77389 -110.7616	4.4	Nearly continuous scarp from south side of Jenny Lake to Bradley Lake area.
continuous, strike change						
S2	Bradley and Taggart Lake areas	N6E	43.7193 43.6811	-110.7616 -110.7664	4.4	Mostly continuous scarp from Bradley and Taggart Lakes extends south; appears to have apparent left-lateral component based on offset of moraines south of Taggart Lake
0.5 - 0.7 km right step; minor overlap						
S3	Stewart Draw and Phelps Lake areas	N42E	43.6837 43.6424	-110.7722 -110.8160	5.5	Mostly continuous scarp with left-lateral component based on offset moraines near Stewart Draw and north of Phelps Lake; inferred at west edge of Phelps Lake and extent south of Phelps Lake is uncertain.
gap in scarps (?), discontinuous, strike change						
S4	South of Open Canyon	N5W	43.6423 43.6217	-110.8160 -110.8142	2.2	Northern extent uncertain. Includes fault trace shown by Smith and others (1993) extending north from Granite Creek.
gap in scarps (?), discontinuous, strike change						
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Fault Section*		Strike*	End Points		Approximate Length (km)	Notes
No.	Locality		lat.	long.		
S5	South of Phelps Lake to Granite Creek	N20E	43.6423 43.6180	-110.8025 -110.8151	2.6	Includes scarps and lineaments in moraines south of Phelps Lake and scarp extending north of Granite Creek. Partly discontinuous along strike and partly overlaps section S4.
continuous, strike change						
S6	South of Granite Creek	N12W	43.6180 43.6118	-110.8151 -110.8134	0.7	Mostly continuous scarp south from Granite Creek
continuous, strike change						
S7	North of Teton Village	N34E	43.6118 43.5983	-110.8134 -110.8255	1.8	Discontinuous mapped scarps along steep linear front.
continuous, strike change						
S8	Teton Village	N41E	43.5983 43.5760	-110.8255 -110.8522	3.3	Somewhat discontinuous scarps through edge of Jackson Hole Ski Area. Appears to be slightly curved trace that is continuous with section S9.
continuous, strike change						
S9	Jensen Canyon	N13E	43.5760 43.5419	-110.8522 -110.8638	3.9	Mostly continuous scarps along linear front. Appears to be slightly curved trace that is continuous with section S8.
discontinuous, 0.3-km left step						
S10	Phillips Ridge	N2E	43.5416 43.5371	-110.8590 -110.8593	0.3	Apparent scarps on edge of Phillips Ridge
end of mapped scarps						
*All fault sections are assumed to dip east to southeast. Dip of individual fault sections are unknown. Overall dip range of fault is 45 to 75 (Byrd, 1995).						

Table A-2: Teton fault - Slip rate data from fault scarp profiles

Site Name	Fault Section	Geomorphic Context of Scarp	Estimated Age Range (thousands of years)	Estimated Surface Offset - Vertical (m)	Estimated Vertical Slip Rate (mm/yr)	Data Source
East of Steamboat Mountain	N2	Thin till from Jackson Lake recession; near end of fault scarp	17-20	2.8	0.14 - 0.16	Ostenaar et al., 1993; p. 24
Wilcox Point	N6	Moraine of Jackson Lake advance	17-20	5.7	0.29 - 0.34	Ostenaar et al., 1993, p. 24
Colter Canyon	N8	South lateral, range-front moraine	20 - 30	15.8	0.53 - 0.79	Byrd, 1995; Table 3.1, no. 16
Moran Bay	C1	Range-front glacial deposits (?) synchronous (?) with Jackson Lake advance (?)	17-20	10	0.50 - 0.59	Byrd, 1995; Table 3.1, no. 17
Bearpaw Bay	C3	Range-front glacial deposits below Skillet Glacier	17-20	23.8	1.19 - 1.40	Gilbert et al., 1983; Appendix A, Figure 12-A
Bearpaw Bay	C3	North lateral moraines below Skillet Glacier	20 - 70(?)	53* 38*	0.76 - 2.65 0.54 - 1.90	Ostenaar and Gilbert, unpub. data., 1984, BP-2, inner moraine Ostenaar and Gilbert, unpub. data., 1984, BP-3, outer moraine
Trapper Lake	C3	Range-front deposits (?)	17 - 30 (?)	26.9	0.90 - 1.58	Byrd, 1995; Table 3.1, no. 15
String Lake	C6	Range-front debris fan	17 - 30 (?)	19.2 22.8	0.64 - 1.13 0.76 - 1.34	Gilbert et al., 1983; Appendix A, Figure 11-A Byrd, 1995; Table 3.1, no. 10
Jenny Lake	C6	North lateral moraine	20 - 70 (?)	56.8	0.81 - 2.84	Ostenaar and Gilbert, unpub. data., 1984, JL-3, cumulative offset on 3 scarps in largest moraine
* See notes for entry in Data Source column						

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Site Name	Fault Section	Geomorphic Context of Scarp	Estimated Age Range (thousands of years)	Estimated Surface Offset - Vertical (m)	Estimated Vertical Slip Rate (mm/yr)	Data Source
Lupine Meadows	S1	Range-front debris fan	17 - 30 (?)	>10.7 18.7 18	> 0.36 - 0.63 0.62 - 1.10 0.60 - 1.06	Gilbert et al., 1983; Appendix A, Figure 9-A Byrd, 1995; Table 3.1, no. 1 Byrd, 1995; Table 3.1, no. 2
Glacier Gulch	S1	Range-front glacial deposits (?)	17 - 30 (?)	29.6	0.99 - 1.74	Byrd, 1995; Table 3.1, no. J
Burned Wagon / Bradley Lake	S1	Range-front glacial deposits of Garnet Canyon	17 - 30 (?)	8.7 13.4 9	0.29 - 0.51 0.45 - 0.79 0.30 - 0.53	Byrd, 1995; Table 3.1, no. 3 Byrd, 1995; Table 3.1, no. 4 Byrd, 1995; Table 3.1, no. 5
Taggart Lake	S2	Range-front glacial deposits from Avalanche Canyon (valley bottom) Subparallel scarp ~ 2 km up Avalanche Canyon South lateral moraine	17- 30 (?) 17 - 30 20 - 70 (?)	12.2 5.2 - 7.0 19.5 12*	0.41 - 0.72 0.17 - 0.41 0.28 - 0.98 0.17 - 0.60*	Gilbert et al., 1983; Appendix A, Figure 7-A May add to total rate (?) for Taggart Lake and intervening scarps south of Jenny Lake Byrd, 1995; Table 3.1, no. 6 (includes backtilt due to graben) *Smith et al., 1993, p. 644. Oblique slip based on 8 m vertical and 9 m left-lateral offset at this site
Beaver Creek / Taggart Lake / Taggart Lake South	S2	Range-front fans off south lateral moraine from Taggart Canyon	17 (?) - 30 (?)	9.9 11.2 14.7 10.4 - 11.3	0.50 - 0.58 0.37 - 0.69 0.49 - 0.86 0.35 - 0.66	Byrd, 1995; Table 3.1, no. 9 Byrd, 1995; Table 3.1, no. 8 Byrd, 1995; Table 3.1, no. 7 Gilbert et al., 1983; Appendix A, Figure 5-A
* See notes for entry in Data Source column						

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Site Name	Fault Section	Geomorphic Context of Scarp	Estimated Age Range (thousands of years)	Estimated Surface Offset - Vertical (m)	Estimated Vertical Slip Rate (mm/yr)	Data Source
Stewart Draw	S3	Range-front glacial deposits	20 - 70 (?)	*42	*0.60 - 2.10	*Smith et al., 1993, p. 643-644. Oblique slip based on 32 m vertical and 26 m left-lateral offset at this site. Includes some backtilting
Granite Creek	S5/S6	Range-front glacial deposits - north lateral moraine	20 - 70 (?)	11 - 13.1	0.16 - 0.66	Byrd, 1995; Table 3.1, no. G and no. 11
		Range-front fan and fluvial deposits at trench site	7.9	3	0.38	Byrd, 1995; Table 3.1, no. T
		Range-front glacial deposits - south lateral moraine	20 - 70 (?)	17.4 - 21.1	0.25 - 1.06	Byrd, 1995; Table 3.1, no. A & B
		Range-front glacial deposits - south of Granite Creek	17 - 30 (?)	8.6	0.29 - 0.51	Byrd, 1995; Table 3.1, no. 12
		Range-front glacial deposits - south of Granite Creek	20 - 70 (?)	11.3 - 11.6	0.16 - 0.58	Gilbert et al., 1983; Appendix A, Figure 3-A; profiles 1 and 3
Teton Village	S8	Range-front debris fans	17 - 30 (?)	11.7 - 12.8	0.39 - 0.75	Byrd, 1995; Table 3.1, no. 13 & 14
			10 - 30 (?)	7.3 - 7.9	0.24 - 0.79	Gilbert et al., 1983; Appendix A, Figure 2-A
* See notes for entry in Data Source column						